

## ABSTRACT

A harmless sterilization method and sterilization apparatus which provide adequate sterilization effects without residual gas. The method includes a sterilization step in which a chamber containing an object to be sterilized is depressurized; a hydrogen peroxide supply step in which hydrogen peroxide is supplied into the chamber; an ozone supply step in which ozone is supplied into the chamber; a sterilization step in which the hydrogen peroxide and ozone supplied inside the chamber are dispersed to sterilize the object to be sterilized; an exhaust step in which gas inside the chamber is exhausted; and a plasma generation step in which plasma is generated inside the chamber to break down hydrogen peroxide and ozone remaining near the object to be sterilized, and radicals which promote sterilization are generated.